

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of	)	
	)	
Irwin Gerszberg et al.	)	
	)	
Serial No.: Continuation of 09/001,417, filed	)	Group Art Unit: Unknown
December 31, 1997	)	
	)	
Filed: Herewith	)	Examiner: Unknown
	)	
For: AN INTELLIGENT SERVICES	)	
DIRECTOR (ISD) OVERALL	)	Attorney Docket No. 03493.00308
ARCHITECTURE	)	(IDS 112814 – cont.)

**PRELIMINARY AMENDMENT**

Commissioner for Patents  
Washington, D.C. 20231

Sir:

Prior to examination on the merits and in conjunction with the continuation application filed herewith pursuant to 37 C.F.R. § 1.53(b), please amend the above-identified application as follows:

**IN THE SPECIFICATION:**

Please amend the specification as follows:

Page 1, after the title of the invention, insert the following paragraph:

--This application is a continuation of prior application serial no. 09/001,417, filed December 31, 1997. The entire disclosure of the prior application is hereby incorporated by reference herein. --

Please replace the paragraph beginning at page 1, line 19, with the following rewritten paragraph:

--A major problem with this configuration is that interexchange carriers attempting to penetrate the local telephone company's territory must lease trunk lines from the local telephone company switch to the interexchange company's network for digital traffic. Furthermore, the Internet service provider must lease a modem from the local phone company in the DSLAM switch and route its data through the local phone company's digital switch. Thus, the local phone company leases and/or provides a significant amount of equipment, driving up the cost of entry for any other company trying to provide local telephone services and making it difficult for the the interexchange companies to differentiate their services. Furthermore, since DSL modem technology is not standardized, in order to ensure compatibility, the type of DSL modem provided by the local telephone company must also be provided to the end user in the customer premises equipment (CPE). Additionally, since the network is not completely controlled by the interexchange companies, it is difficult for the interexchange companies to provide data at committed delivery rates and/or desired quality levels. Any performance improvements implemented by the interexchange companies may not be realized by their customers, because the capabilities of the local telephone company equipment may or may not meet their performance needs. Thus, it is difficult for the interexchange companies to convince potential customers to switch to their equipment or to use their services. These factors ensure the continued market presence of the local telephone company.--

Please replace the paragraph beginning at page 6, line 6, with the following rewritten paragraph:

--As shown in Fig. 2, in some embodiments the ISD 22 may include a controller 100 which may have any of a variety of elements such as a central processing unit 102, a DRAM 103, an SRAM 104, a ROM 105 and/or an internet protocol (IP) bridge router 106 connecting the controller 100 to a system bus 111. The system bus 111 may be connected with a variety of network interface devices 110. The network interface devices 110 may be variously configured to include an integrated services digital network (ISDN) interface 113, an Ethernet interface 119 (e.g., 28.8 kbs data, 56 kbs data, ISDN, 10 BaseT, 100 BaseT, etc.) an IEEE 1394 "fire wire" interface 112 (e.g., for a digital videodisc device (DVD)), a TVRC modem interface 114 (e.g.,

for a digital subscriber line (DSL) modem), a residential interface 115, (e.g., standard POTS phone systems such as a tip ring), a business interface 116 (e.g., a T1 line and/or PABX interface), a radio frequency (RF) audio/video interface 120 (e.g., a cable television connection), and a cordless phone interface 123 (e.g., a 900 MHZ transceiver). Connected to one of the network interfaces and/or the system bus 111 may be any number of devices such as an audio interface 122 (e.g., for digital audio, digital telephones, digital audio tape (DAT) recorders/players, music for restaurants, MIDI interface, DVD, etc.), a digital phone 121, a videophone/user interface 130, a television set-top device 131 and/or other devices. Where the network interface is utilized, it may be desirable to use, for example, the IEEE 1394 interface 112 and/or the Ethernet interface 119.--

Please replace the paragraph beginning at page 14, line 1, with the following rewritten paragraph:

--A basic Premises Distribution Network (PDN) 500 for one exemplary embodiment of a typical residential application of the ISD 22 is shown in Fig. 5. The premise distribution network 500 may include one or more Ethernet connections 501 for connecting a plurality of devices such as a number of personal computers 14A, 14B, a vision phone, and/or other devices. Further, the premise distribution network 500 may include any number of conventional analog lines 505 (e.g., Tip/Ring (T/R) phone lines), each having one or more associated analog phones (e.g., 15A – 15n), and/or associated PCs with modem and/or phone cards. Further, the premises distribution network 500 may include any number of ISDN lines 506, each having any number of digital appliances such as ISDN compliant devices and/or video phones 130. The premises distribution network 500 may use existing twisted pair telephone line and/or may utilize a special cable to facilitate Ethernet and/or other LAN connections. Where the video phone 130 shares the same LAN as a connected PC 14A, prioritization software in the LAN driver gives priority to video and/or audio transmissions to and from the video phone to reduce latency time and unpredictable delays. Alternatively, the video phone 130 may be coupled via a dedicated ISDN connection, a dedicated ethernet connection, and/or another dedicated connection to the ISD 22. The video phone may have an integrated analog phone for lifeline support. Alternatively, one of the analog phones serves the function of providing lifeline support. Where the video phone 130 includes

lifeline support, it is preferred to transmit data to the phone in a band above 7 KHz using ADSL like modem technology.--

Please delete pages 23, 24, 25, and 26 in their entirety and replace them with the attached new pages 23, 24, 25, and 26.

IN THE CLAIMS:

Please cancel Claims 1-4 and insert new claims 5-31.

--5. A communications device disposed at a telephone customer premises, comprising:  
a processor;

a digital subscriber line modem, connected to said processor, and further connected to a telephone network central office by a twisted-pair wire connection;

one or more communication interfaces, connected to said processor, and further connected to a plurality of pieces of customer premises equipment located at the telephone customer premises;

wherein said processor is configured to:

multiplex outgoing digital data from said plurality of pieces of customer premises equipment for transmission on said twisted-pair wire connection by said digital subscriber line modem in a digital portion of a frequency spectrum of said digital subscriber line modem;

facilitate communication from a first one of said plurality of pieces of customer premises equipment to a second one of said plurality of pieces of customer premises equipment;

monitor a use status of one or more of said plurality of pieces of customer premises

equipment; and

redirect incoming data traffic in accordance with said use status.

6. The communications device of claim 5, where said plurality of pieces of customer premises equipment includes a telephone.

7. The communications device of claim 6, where said plurality of pieces of customer premises equipment further includes a television set-top box.

8. The communications device of claim 6, where said plurality of pieces of customer premises equipment further includes a videophone.

9. The communications device of claim 6, where said plurality of pieces of customer premises equipment further includes a personal computer.

10. The communications device of claim 5, further comprising:  
a radio frequency interface, communicatively connected to said processor; and  
an integrated digital services network interface, communicatively connected to said processor.

11. The communications device of claim 5, further comprising a cordless telephone interface, communicatively connected to said processor and a cordless telephone.

12. The communications device of claim 5, further comprising an analog telephone connected to said digital subscriber line modem by a lifeline connection, whereby analog telephone service may continue to be provided in the event of a power failure at the telephone customer premises.

13. The communications device of claim 5, further comprising:

a residential interface located at said telephone customer premises and connected to said processor; and

a plurality of analog telephones connected to said residential interface, wherein said processor is configured to create a plurality of virtual telephone lines to allow said plurality of analog telephones to simultaneously communicate using the twisted-pair wire connection.

14. The communications device of claim 5, further comprising a protector block between said digital subscriber line modem and said twisted-pair telephone connection.

15. A telephone service method, comprising the steps of:

receiving incoming data for first and second pieces of customer premises equipment in a single multiplexed signal from a telephone switch over a telephone connection;

demultiplexing said signal;

converting a first portion of said incoming data to a communications protocol of said first piece of customer premises equipment;

transmitting said first portion of said incoming data to said first piece of customer premises equipment; and

transmitting a second portion of said incoming data to said second piece of customer premises equipment, wherein said steps of transmitting said first and second portions of said incoming data are performed in accordance with priorities assigned to said first and second pieces of customer premises equipment.

16. The method of claim 15, further comprising the steps of:

receiving first outgoing data from said first piece of customer premises equipment;

receiving second outgoing data from said second piece of customer premises equipment;

combining said first outgoing data with said second outgoing data to form a single outgoing signal; and

transmitting said single outgoing signal to said telephone switch.

17. The method of claim 15, further comprising the steps of:

receiving a multicast signal from said telephone switch;

selectively filtering said multicast signal according to predefined preferences of a telephone customer; and

delivering to said first piece of customer premises equipment the selectively filtered portion of said multicast signal.

18. The method of claim 15, further comprising the steps of:

monitoring a use status of said first and second pieces of customer premises equipment;

monitoring a use status of a third piece of customer premises equipment; and

transmitting said first portion of said incoming data to said third piece of customer premises equipment when said first piece of customer premises equipment is in use and said third piece of customer premises equipment is not in use.

19. The communications device of claim 5, wherein said processor is further configured to:

receive an incoming signal on said twisted-pair wire connection, wherein said incoming signal contains multiplexed digital data intended for two or more of said plurality of pieces of customer premises equipment;

demultiplex said incoming signal; and

transmit demultiplexed portions of said incoming signal to said two or more of said plurality of pieces of customer premises equipment.

20. The communications device of claim 5, wherein said processor is further configured to

dynamically allocate an available bandwidth of said digital subscriber loop modem according to said use status.

21. The method of claim 15, wherein said single multiplexed signal is a digital signal, and wherein said first and second portions of said incoming data are digital signals.

22. The device of claim 5, wherein said one or more communication interfaces includes a fire wire interface carrying a plurality of video signals for a plurality of video devices.



23. A communications device disposed at a telephone customer premises, comprising:

a processor;

a digital subscriber line modem, connected to said processor, and further connected to a telephone network central office by a twisted-pair wire connection;

one or more communication interfaces, connected to said processor, and further connected to a plurality of pieces of customer premises equipment located at the telephone customer premises;

a residential interface located at said telephone customer premises and connected to said processor; and

a plurality of analog telephones connected to said residential interface, wherein said processor is configured to create a plurality of virtual telephone lines to allow said plurality of analog telephones to simultaneously communicate using the twisted-pair wire connection; and

wherein said processor is further configured to:

multiplex outgoing digital data from said plurality of pieces of customer premises equipment for transmission on said twisted-pair wire connection by said digital subscriber line modem in a digital portion of a frequency spectrum of said digital subscriber line modem; and

facilitate communication from a first one of said plurality of pieces of customer premises equipment to a second one of said plurality of pieces of customer premises equipment.

24. The communications device of claim 6, where said plurality of customer premises

equipment includes an analog telephone.

25. The communications device of claim 6, where said plurality of customer premises equipment includes a cordless telephone.

26. The communications device of claim 5, where one of said communication interfaces is an Ethernet interface.

27. The communications device of claim 5, where one of said communication interfaces is an ISDN interface.

28. The communications device of claim 5, where said outgoing digital data is in a packetized form having an address.

29. The method of claim 5, where said incoming data is in a packetized form having an address.

30. The method of claim 15, where said step of transmitting a second portion of said incoming data further includes the step of using an Ethernet interface.

31. The method of claim 15, where said step of transmitting a second portion of said incoming data further includes the step of using an ISDN interface.--

**REMARKS**

Claims 5-31 are pending for examination. Favorable consideration thereof is respectfully requested.

Respectfully submitted,

BANNER & WITCOFF, LTD.

Dated: September 27, 2001

By:



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interface 112 (e.g., for a digital videodisc device (DVD)), a TVRC modem interface 114 (e.g., for a digital subscriber line (DSL) modem), a residential interface [114] 115, (e.g., standard POTS phone systems such as a tip ring), a business interface 116 (e.g., a T1 line and/or PABX interface), a radio frequency (RF) audio/video interface 120 (e.g., a cable television connection), and a cordless phone interface 123 (e.g., a 900 MHZ transceiver). Connected to one of the network interfaces and/or the system bus 111 may be any number of devices such as an audio interface 122 (e.g., for digital audio, digital telephones, digital audio tape (DAT) recorders/players, music for restaurants, MIDI interface, DVD, etc.), a digital phone 121, a videophone/user interface 130, a television set-top device 131 and/or other devices. Where the network interface is utilized, it may be desirable to use, for example, the IEEE 1394 interface 112 and/or the Ethernet interface 119.--

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the video phone 130 includes lifeline support, it is preferred to transmit data to the phone in a band above 7 KHz using ADSL like modem technology.--

The following pages 23-26 should replace original pages 23-26 of the application as filed.

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Referring to Fig. 11, various protocol stacks may be utilized to transmit the voice and data. For example, a voice signaling stack such as in-band voice over ATM and/or other voice signaling stack may be used. Additionally, a ether net and/or other IP stack may be utilized.

Referring to Fig. 12, the ISD may be included in a network interface unit. The network interface unit may be variously mounted either inside and/or outside of the house. Where a DSL modem and/or ISD is incorporated in the NIU 600, it may be desirable to mount the unit external to the home to allow access for service and to upgrade the ISD without entering the user's home. Alternatively, the NIU 600 may be provided within the home where power is more readily available and where temperature is more stable. Auxiliary power may be provided via an outlet within the house via a direct power link 612 and/or via a step-down transformer 613 connected to the ISD 22 via one or more twisted pair phone lines from within the house to outside of the house to the NIU via a spare twisted pair 614. The auxiliary link allows easy retrofit of existing NIUs 600. Phone lines and/or other interface lines may be provided from the ISD 22 to the house via lines 620 (e.g., twisted pair cabling). The cordless interface 123 of the ISD 22 may include a antenna 630, e.g., a 900 Mhz antenna mounted to the exterior of the NIU 600. The antenna 630 may be used as a cellular base station for other wireless devices associated with other customer premises. Further, a cable 630 may be associated with RF audio/video interface 120 in the ISD 22. The cable 630 may be coupled to a set-top and/or a TV 514.

The following applications, filed concurrently herewith, are hereby incorporated by reference:

1. A Hybrid Fiber Twisted-pair Local Loop Network Service Architecture (Serial Number 09/001,360);
2. Dynamic Bandwidth Allocation for use in the Hybrid Fiber Twisted-pair Local Loop Network Service Architecture (Serial Number 09/001,425);

3. The VideoPhone (Serial Number 09/001,905);
4. VideoPhone Privacy Activator (Serial Number 09/001,909);
5. VideoPhone Form Factor (Serial Number 09/001,583);
6. VideoPhone Centrally Controlled User Interface With User Selectable Options (Serial Number 09/001,576);
7. VideoPhone User Interface Having Multiple Menu Hierarchies (Serial Number 09/001,908);
8. VideoPhone Blocker (Serial Number 09/001,353);
9. VideoPhone Inter-com For Extension Phones (Serial Number 09/001,358);
10. Advertising Screen Saver (Serial Number 09/001,574);
11. Information Display for Visual Communication Device (Serial Number 09/001,906);
12. VideoPhone Multimedia Announcement Answering Machine (Serial Number 09/001,911);
13. VideoPhone Multimedia Announcement Message Toolkit (Serial Number 09/001,345);
14. VideoPhone Multimedia Video Message Reception (Serial Number 09/001,362);
15. VideoPhone Multimedia Interactive Corporate Menu Answering Machine Announcement (Serial Number 09/001,575);
16. VideoPhone Multimedia Interactive On-Hold Information Menus (Serial Number 09/001,356);
17. VideoPhone Advertisement When Calling Video Non-enabled VideoPhone Users (Serial Number 09/001,361);
18. Motion Detection Advertising (Serial Number 09/001,355);
19. Interactive Commercials (Serial Number 09/001,578);



20. VideoPhone Electronic Catalogue Service (Serial Number 09/001,421);
21. A Multifunction Interface Facility Connecting Wideband Multiple Access Subscriber Loops With Various Networks (Serial Number 09/001,356);
22. Life Line Support for Multiple Service Access on Single Twisted-pair (Serial Number 09/001,343);
23. A Network Server Platform (NSP) For a Hybrid Fiber Twisted-pair (HFTP) Local Loop Network Service Architecture (Serial Number 09/001,582);
24. A Communication Server Apparatus For Interactive Commercial Service (Serial Number 09/001,344);
25. NSP Multicast, PPV Server (Serial Number 09/001,580);
26. NSP Internet, JAVA Server and VideoPhone Application Server (Serial Number 09/001,354);
27. NSP WAN Interconnectivity Services for Corporate Telecommuting (Serial Number 09/001,540);
28. NSP Telephone Directory White-Yellow Page Services (Serial Number 09/001,426);
29. NSP Integrated Billing System For NSP services and Telephone services (Serial Number 09/001,359);
30. Network Server Platform/Facility Management Platform Caching Server (Serial Number 09/001,419);
31. An Integrated Services Director (ISD) Overall Architecture (Serial Number 09/001,417);

32. ISD VideoPhone (Customer Premises) Local House Network (Serial Number 09/001,418);
33. ISD Wireless Network (Serial Number 09/001,363);
34. ISD Controlled Set-Top Box (Serial Number 09/001,424);
35. Integrated Remote Control and Phone (Serial Number 09/001,423);
36. Integrated Remote Control and Phone User Interface (Serial Number 09/001,420);
37. Integrated Remote Control and Phone Form Factor (Serial Number 09/001,910);
38. VideoPhone Mail Machine (Attorney Docket No. 3493.73170);
39. Restaurant Ordering Via VideoPhone (Attorney Docket No. 3493.73171);
40. Ticket Ordering Via VideoPhone (Attorney Docket No. 3493.73712);
41. Multi-Channel Parallel/Serial Concatenated Convolutional Codes And Trellis Coded Modulation Encode/Decoder (Serial Number 09/001,342);
42. Spread Spectrum Bit Allocation Algorithm (Serial Number 09/001,842);
43. Digital Channelizer With Arbitrary Output Frequency (Serial Number 09/001,581);
44. Method And Apparatus For Allocating Data Via Discrete Multiple Tones (Serial Number 08/997,167); and
45. Method And Apparatus For Reducing Near-End Cross Talk In Discrete Multi-Tone Modulators/Demodulators (Serial Number 08/997,176).

The present application is #31 on the above list.

In addition, the following two patent applications are hereby incorporated by reference: